

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY  
REGION II

DATE: MAY 28 1986

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SUBJECT: National Gypsum Asbestos Dump Site QA Plan

FROM: Lisa Gattton, Quality Assurance Chemist  
Monitoring Management Branch

36941

TO: John Czapor, Chief  
Site Investigation and Compliance Branch

THRU: Gerard F. McKenna, Chief  
Monitoring Management Branch

Gerard F. McKenna

We have received and reviewed the Site Operations Plan with Addenda, dated May 24, 1986, for the Asbestos Dump site along with your transmittal memo. Marcus Kantz's comments on the air section are attached and my comments follow.

1. Concerning the use of galvanized steel well casing for the background well, the "Guide to the Selection of Materials for Monitoring Well Construction and Ground Water Sampling", January 1984, p.45, concerning galvanized steel, states: "Under reducing conditions at pH values between 5 and 7, the presence of chloride, carbonate and nitrate can encourage rapid aggressive attack of the material. In some cases,  $\text{CO}_3^{-2}$  and  $\text{NO}_3^-$  may actually reverse the electrochemical potential between the zinc oxide coating and the base metal, resulting in accelerated dissolution of the iron-pipe. Sulfur compounds, organic compounds, and dissolved copper concentrations also are implicated in the rapid deterioration of galvanized steels under saturated conditions."

In light of this information, and in light of the fact that the other wells on-site will be stainless steel 316, we do not feel it would be scientifically prudent or cost effective to use galvanized steel well casing in the background well. There is a very real possibility that contaminants could be leached from the casing which could interfere in the ground water chemistry, or could give false positives for certain metals. For these reasons, we will not approve the use of galvanized steel in this project, and thus the justification for its use is left to you.

2. Concerning dissolved versus total metals analysis, our position and the guidance from Washington is that, when considering metals contamination of ground water both dissolved and total metals data should be evaluated for the following reasons:
  - a. Material which is suspended in the ground water, which metal ions will bind with, and which is of a large enough particle size so as not to pass through a 0.45 u membrane filter, should be considered when evaluating ground water contamination.

2.

- b. If a well is properly drilled, installed, developed, and purged there will be no other "contents of the well", as you state, that would have to be removed because they were not naturally present in the ground water.
  - c. The following are ways that the chemistry of the ground water is changed during filtering of metals samples, which makes that data more suspect than data from total metals analysis:
    - 1. exacerbated volatilization of dissolved organic chemicals due to increased sample manipulation;
    - 2. adsorption of dissolved organic chemicals onto filtration apparatus;
    - 3. removal of colloidal particles that are smaller than the filter pore size and may be mobile in ground water due to filtercake filtration;
    - 4. adsorption of dissolved organic chemicals in ground water not in equilibrium with particulates in the sample taken and subsequent removal by filtration;
    - 5. adsorption of dissolved organic chemicals onto particle "sites" formerly occupied by volatiles lost by process (1) and subsequent removal by filtration;
    - 6. exacerbated oxidation of sample may cause precipitation of Fe and/or other Eh sensitive species resulting in possible coprecipitation of dissolved organic chemicals;
    - 7. if acid is added to sample prior to filtration to prevent Fe precipitation, humic macromolecules which may be "piggy-backing" organic chemicals may flocculate, adsorb even more organic chemicals, and be removed by filtration; thereby, removing mobile organic chemicals from the sample; and,
    - 8. filtration will probably remove NAPL from the sample; because finely dispersed NAPL may be clear, filtration may remove NAPL from the sample without any observation of the process.
3. Concerning the Aquatic Impact Assessment:
- a. Exact site selection should be made by a biologist with macroinvertebrate experience. The study can be drastically biased by site selection if dissimilar current speeds, bottom types, etc., are selected.
  - b. Table 2-1 does not match figure 2-7 for sediment sampling sites. Which is correct? Of these, which will be sampled for macroinvertebrates?

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3.

- c. The field log entries concerning flow, substrate description must be passed to the biologist making determinations from the data to assess colonic changes.
  - d. If general detritus is found in the samples (i.e., algae/moss), the sampler should not attempt to segregate out the macroinvertebrates in the field, unless he has prior experience "picking" samples. The "moss" should be collected and picking occur under laboratory conditions (good lighting, magnifying glass, white enamel pan).
4. Concerning the remaining points in my memo to Nigel Robinson dated January 8, 1986:
- a. A random horizontal soil sampling plan should be prepared statistically before going out into the field to do sampling, so that the field team is prepared when they begin work. Random sampling is a statistical method of sampling design which should be prepared in advance and mapped. Please provide a map of the random sampling plan.
  - b. YWC, Inc., is only a participant in CLP for organics; they, therefore, must run performance evaluation samples for the inorganics samples they will receive. When you or Nigel respond in writing to this memo, you can request formally that I send those PEs to YWC by giving me a list of all inorganic parameters they will run.
  - c. If it is not possible to take a sediment sample with a corer, what utensil will be used?
  - d. Eighty milligrams of sodium thiosulfate per liter of base/neutral/acid extractable sample taken should be added to the sample jar when residual chlorine is present. This point is my oversight.
5. Finally, I understand that some of the points addressed above have already been negotiated with the responsible party and that it is not agreeable for your to re-negotiate these points. There is a point that can possibly be used in re-negotiations which would allow some cost savings for the responsible party. That is, if you can collect ground water from on-site and show that the pH is greater than 4.5, and the chloride content less than 1000 ppm, stainless steel 304 can be used for all the well casings rather than 316. This could result in approximately a 40% cost savings for well casings.

If you have any further questions, please call me at FTS 340-6676.

Attachment

cc: Nigel Robinson

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